

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
23 August 2007 (23.08.2007)

PCT

(10) International Publication Number
WO 2007/095477 A3

(51) International Patent Classification:
G06F 15/00 (2006.01)

(21) International Application Number:
PCT/US2007/061956

(22) International Filing Date:
10 February 2007 (10.02.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/773,714 14 February 2006 (14.02.2006) US
11/673,560 10 February 2007 (10.02.2007) US

(71) Applicant (for all designated States except US): **FOTONATION VISION LIMITED** [IE/IE]; Galway Business Park, Dangan, Galway City, County Galway (IE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DRIMBAREAN, Alexandru** [RO/IE]; 60 Garraun Ard, Doughiska, Galway (IE). **CORCORAN, Peter** [IE/IE]; Cregg, Claregalway,

Co. Galway (IE). **STEINBERG, Eran** [IL/US]; 137 Granville Way, San Francisco, CA 94127 (US).

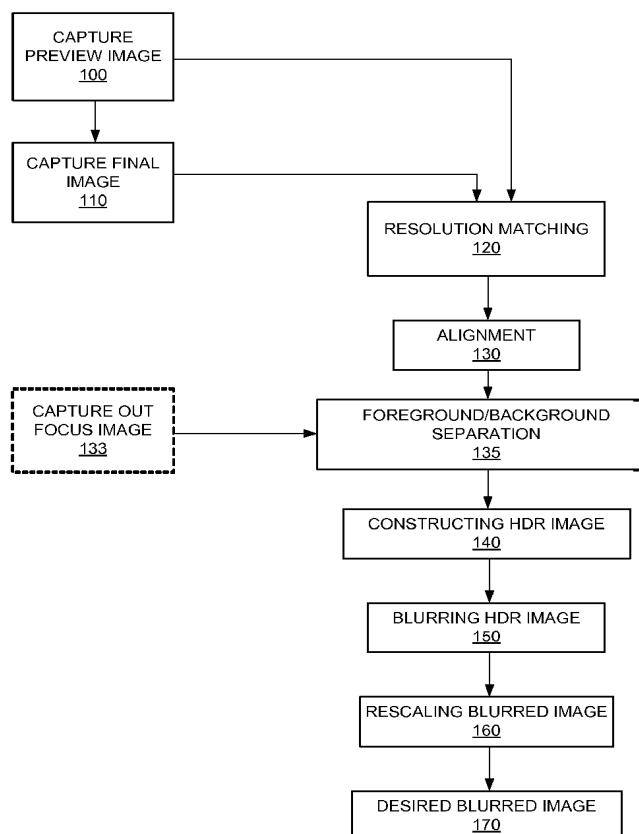
(74) Agents: **SMITH, Andrew V.** et al.; Fotonation IP Dept., 800 Airport Blvd., Suite 522, Burlingame, CA 94010 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,

[Continued on next page]

(54) Title: IMAGE BLURRING



(57) Abstract: A method of blurring an image includes acquiring two images of nominally a same scene taken at a different light exposure levels. At least one region of one of the images includes pixels having saturated intensity values. For at least one of the saturated pixels, values are extrapolated from the other image. At least a portion of a third image is blurred and re-scaled including pixels having the extrapolated values.

WO 2007/095477 A3



RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report*

(88) Date of publication of the international search report:

24 July 2008

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/61956

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06F 15/00 (2008.01)

USPC - 358/1.9

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - G06F 15/00; G06K 1/00, 9/40; H04N 1/60, 1/46, 1/387; G03F 3/08 (2008.01)

USPC - 358/1.9, 511, 523, 452; 382/255, 264

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Database: PatBase

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ---	US 2002/0093670 A1 (LUO et al) 18 July 2002 (18.07.2002) entire document	1, 3-20 -----
Y		2
Y	US 2006/0008171 A1 (PETSCHNIGG et al) 12 January 2006 (12.01.2006) entire document	2

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

05 February 2008

Date of mailing of the international search report

14 MAR 2008

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

Durb

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/61956

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See Extra Sheet (page 10)

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.